



EMC Data Domain DD600 Series

Deduplication storage for midsized data centers

Next-generation data protection

EMC® Data Domain® deduplication storage systems have revolutionized disk backup and remote office data protection with high-speed, inline deduplication. Backup data can be reduced in size by an average of 10-30x, so disk backup storage is now cost-effective for long-term onsite retention and highly efficient for network-based replication to disaster recovery sites.

Scalable deduplication storage

A single EMC Data Domain DD690 system delivers up to 1.1 TB/hour of throughput performance per stream, critical in protecting the large databases that are “job one” in data centers. All Data Domain systems derive their performance advantages from the EMC Data Domain Stream-Informed Segment Layout (SISL™) scaling architecture. This CPU-centric approach minimizes the number of disk spindles required to achieve the throughput performance needed for critical single-stream operations. Data Domain systems store each unique data sequence only once and save significant physical storage capacity by substituting small references for each identical redundant sequence, enabling cost-efficient retention on disk for fast, reliable recoveries. Snapshot technology further enables extended local and offsite retention on disk.

Easy integration

The Data Domain Appliance series is qualified with all leading enterprise backup software and archiving applications and easily integrates into the existing storage infrastructure without change for either data center or distributed office data protection.

Multi-site disaster recovery

EMC Data Domain Replicator software enables network-efficient replication to a remote site for disaster recovery, remote office data protection, or multi-site tape consolidation. The DD690 supports replication fan-in from Data Domain systems installed at up to 90 remote offices. Cross-site deduplication minimizes the required bandwidth between all sites, since only the first instance of data is transferred across any of the WAN segments. Datasets are effectively shrunk by 99 percent, to a size where network-efficient replication is fast and reliable.

Ultra-safe storage for reliable recovery

The EMC Data Domain Data Invulnerability Architecture provides continuous recovery verification and continuously detects and protects against data integrity issues during the initial backup and throughout the data lifecycle. Unlike any other enterprise array or file system, each system ensures recoverability is verified and then continuously re-verified.

Operational simplicity

Data Domain systems are simple to install and manage. You can connect an appliance to your backup software’s media server as either a file server via Ethernet or as a virtual tape library (VTL) via Fibre Channel. Symantec OpenStorage is also supported; all three interfaces can be used simultaneously.

The Big Picture

Scalable Deduplication Storage

- Fast, inline deduplication with up to 1.1 TB/hour of single stream throughput
- Up to 2.7 TB/hour of aggregate throughput
- Extended retention providing up to 1.7 PB of logical storage
- 10-30x average data reduction

Easy Integration

- Supports leading backup and archive applications
- Supports leading enterprise applications for database, e-mail, content management, and virtual environments
- Simultaneous use of VTL, NAS and Symantec OpenStorage

Multi-Site Disaster Recovery

- 99 percent bandwidth efficiency for network-based replication
- Flexible replication topologies for tape-free DR or tape consolidation
- Replication from up to 90 remote sites

Ultra-Safe Storage for Reliable Recovery

- Continuous recovery verification, fault detection, and healing
- Dual disk parity RAID-6

Operational Simplicity

- Power, cooling, and space efficiencies for green operation
- Supports any combination of backup and archive applications in a single system

DD600 Series Specifications	DD610	DD630	DD660	DD690
Capacity, Raw ³	Up to 6 TB	Up to 12 TB	Up to 36 TB ⁴	Up to 48 TB ⁴
Logical Capacity, Standard ^{1,3}	75 TB	165 TB	520 TB ⁴	710 TB ⁴
Logical Capacity, Redundant ^{2,3}	196 TB	420 TB	1.3 PB ⁴	1.7 PB ⁴
Maximum Throughput	675 GB/hr ⁵	1.1 TB/hr ⁵	2 TB/hr ⁶	2.7 TB/hr ⁶
Power Dissipation ⁷	329 W	329 W	575 W	564 W
Cooling Requirement ⁷	1235 BTU/hr	1235 BTU/hr	1962 BTU/hr	1925 BTU/hr

1. Mix of typical enterprise backup data (filesystems, databases, e-mail, developer files), full backup weekly, incremental backup daily, to system capacity.
2. Mix of typical enterprise data (filesystems, databases, e-mail, developer files), full backup daily, to system capacity.
3. All capacity values are calculated using Base 10 (i.e., 1 TB = 1,000,000,000,000 bytes) and the maximum raw capacity configuration.
4. Includes support for add-on shelves.
5. Maximum throughput achieved using VTL interface and 4 Gb/s Fibre Channel.
6. Maximum throughput achieved using OpenStorage and 10 Gb Ethernet.
7. Controller only

Software

EMC Data Domain Operating System (DD OS) 4.8 or later

Software Features

Global Compression™, Data Invulnerability Architecture including end-to-end verification (ongoing) and integrated dual disk parity RAID-6, snapshots, telnet, FTP, SSH, e-mail alerts, scheduled capacity reclamation, Ethernet failover and aggregation, EMC Data Domain OpenStorage, EMC Data Domain Replicator, EMC Data Domain Encryption, EMC Data Domain Virtual Tape Library, and EMC Data Domain Retention Lock optional software

Management

EMC Data Domain Enterprise Manager, SNMP, and command line interface

Data Access

NFS v3 over TCP, CIFS, Symantec OpenStorage, tape library emulation (VTL) over Fibre Channel

System Expansion

DD690: Up to 48 TB raw capacity

- Up to six 8 TB expansion shelves
- Up to three 16 TB expansion shelves
- Support for a mix of 8 TB and 16 TB expansion shelves up to 48 TB raw capacity

DD660: Up to 36 TB raw capacity; 24 TB external

- Up to three 8 TB expansion shelves
- Up to one 16 TB expansion shelf and one 8 TB expansion shelf

DD630: Up to 12 TB raw capacity

- Seven or twelve 1 TB internal drives
- No external expansion

DD610: Up to 6 TB raw capacity

- Seven or twelve 500 GB internal drives
- No external expansion

Regulatory Approvals

Safety: UL 60950-1, CSA 60950-1, EN 60950-1, IEC 60950-1, GS, SABS, GOST, IRAM
Emissions: FCC Class A, EN 55022, CISPR 22, VCCI, BSMI, MIC, ICES-003
Immunity: EN 55024, CISPR 24
Power Line Harmonics: EN 61000-3-2

Hardware Platform

2U 19-inch, rack mountable, use in 4-post rack, hotplug disks, redundant fans, redundant power supplies, serial port, 2 copper 10/100/1000 Ethernet ports and optional dual-port copper or optical 1 Gb Ethernet. Optional dual-port copper or single-port optical 10 Gb Ethernet on DD660 and DD690 models only.

System Weight

DD690: 51 lbs (23 kg)
DD660: 66 lbs (30 kg)
DD610/DD630, 7 drives: 49 lbs (22.2 kg)
DD610/DD630, 12 drives: 57 lbs (25.8 kg)

System Dimensions (WxDxH)

DD660/DD690: 19" x 29.5" x 3.5"
(48.3 cm x 74.9 cm x 8.9 cm); 2 EIA units

DD610/DD630: 19" x 22" x 3.5"

(48.3 cm x 55.9 cm x 8.9 cm); 2 EIA units

Minimum Clearances

Front, with bezel: 1.56" (4.0 cm); Rear: 5" (12.7 cm)

Power (VA)

100-120 / 200-240 V~, 50/60 Hz
DD690: 564 VA
DD660: 575 VA
DD610/DD630: 7 drives, 319 VA; 12 drives, 362 VA

System Thermal Rating

DD690: 1925 BTU/hr
DD660: 1962 BTU/hr
DD610/DD630, 7 drives: 1089 BTU/hr, 301 Watts
DD610/DD630, 12 drives: 1235 BTU/hr, 329 Watts

Operating Temperature

10°C to 35°C (50°F to 95°F)

Operating Humidity

20% to 80% non-condensing

Non-operating (Transportation) Temperature

-40°C to +65°C (-40°F to +149°F)

Operating Acoustic Noise

DD660/DD690: Max 7.0 BA, sound power at rear of unit when all disks seek simultaneously
DD610/DD630: Max 7.9 BA, sound power at rear of unit when all disks seek simultaneously

EMC²
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Take the next step

To learn more about EMC Data Domain deduplication storage, contact your local EMC sales representative or authorized value added reseller, call us at 1-866-WE-DDUPE or visit www.EMC.com.